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Review Article

LITERATURE REVIEW AND PHARMACOLOGICAL ACTIVITIES OF *JEERAKA*

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ABSTRACT

Jeeraka is widely utilized in Ayurvedic therapeutic preparations, both on its own and in combination with other herbs. *Acharya Charaka* listed it as part of the *Shula Prashamana* group, while *Susruta* and *Vagbhata* classified it under the *Pippalyadi Varga.* Additionally, *Jeeraka* is mentioned in the *Haritakyadi Varga* in *Bhavaprakasha Nighantu.* It is primarily known for its carminative and digestive properties like *Deepana pachana grahi,* and it is also employed for various conditions related to the *Garbhashaya* (uterus), *Hrdya* (heart), and *Netra* (eyes), among others. *Jeeraka* is identified as Cuminum cyminum and belongs to the Umbelliferae family. **Materials and methods:** Relevant Ayurvedic texts, including the *Caraka Samhita, Sushruta Samhita,* and various *Nighantus,* as well as modern literature, research works, and online sources, have been considered. **Results:** Examined the vernacular names and synonyms of *Jeeraka, Nirukthi*, and *Rasapanchaka,* including the therapeutic properties of *Jeeraka.* **Conclusion:** Although *Jeerka* is a spice commonly used in everyday cooking, it also possesses impressive pharmacological properties.

INTRODUCTION

In Ayurveda, information about medications with natural origins is obtained from the *Vedas, Samhitas,* and *Nighantus.* The botanical source of the *Jeeraka* plant is Cuminum cyminum Linn, a member of the Umbelliferae family.

The main purpose of the fragrant plant *Jeeraka* is to improve digestion. Since the *Vedic* era, it has been a widely used spice and is still used in recipes for common foods today. It is currently mostly used to treat digestive problems, and it comes in numerous forms and quantities to address different ailments. The distinctiveness of *Jeeraka* is somewhat ambiguous, though, because other condiments have comparable qualities. *Jeeraka* is distinguished by its *Laghu ruksha guna* (light, dry properties), *Usna veerya* (heating potency), *Katu rasa* (pungent flavour), and *Katu vipaka* (post-digestive effect). It has many phytochemical ingredients and is grown as an annual herb.

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MATERIALS AND METHODS

This draws upon a rich tapestry of wisdom found in ancient Ayurvedic texts including the esteemed Caraka Samhita and the comprehensive *Sushruta Samhita*. In addition, various *Nighantus* and compendium of Ayurvedic terms have been meticulously examined. To compliment these timeless sources, a thorough exploration of contemporary literature, cutting edge research and reliable online resources has been undertaken ensuring a well-rounded and insightful examination of the subject.

Results

Vernacular names of *Jeeraka*[6]

1. Bengali names: Jeera, Sada Jeera, Shahajeere, Jeere
2. Hindi names: Safed Jeera, Sada Jeera, Sadarana Jeera
3. Marathi names: Jire, Pandare Jeere
4. Gujarati names: Jeeru, Shankanu, Jeerum, Sadu Jeerum, Ghoul Jeerum
5. Tamil name: Cheerakam, Shiragam
6. Kannada name: Jeerige
7. Telugu name: Jeelakara, Jeela Kari
8. Malayalam name: Jeerakam
9. Arabian name: Kammun, Avyaja
10. Farsi name: Jeera e Safad

Taxonomical classification[7]

Sub-kingdom	Streptophyta
Super division	Spermato phyta- Seed plants
Division	Magnoliophyte- Flowering plants
Class	Magnolioprida- Dicotyledons
Family	Umbelliferae
Genus	Cuminum
species	Cuminum cyminum

Classification

According to the *Samhita*

S.No	*Samhita*	*Varga*
1.	*Charak Samhita*	*Shula prashamana varga*
2.	*Susruta Samhita*	*Pippalyadi varga*
3.	*Astanga Hridaya*	*Pippalyadi varga*

According to the *Nighantu*

S.No.	*Nighantu*	*Varga*
1.	*Dhanvantari Nighantu*	*Satapushpadi varga*
2.	*Shodala Nighantu*	*Satapushpadi varga*
3.	*Madanapala Nighantu*	*Shunthyadi varga*
4.	*Raja Nighantu*	*Pippalyadi Varga*
5.	*Bhavaprakasha Nighantu*	*Haritakyadi varga*
6.	*Priya Nighantu*	*Satapushpadi varga*

Rasa panchaka* of *Jeeraka

- *Rasa- Katu*
- *Guna-Laghu, Rooksha*
- *Veerya- Ushna*
- *Vipaka- Katu vipaka*
- *Dosha karma- Vata kapha samaka, Vata samaka* due to its *Usna virya* and *Kapha samaka* due to its *Ushna virya, Katu vipaka* and *Katu rasa.*

Different varieties of *Jeeraka:* *Susruta* quoted *Jeeraka Dravya* in *Susruta. Sutrastana.* In *Dhanvantari Nighantu* we come across four varieties viz., *Jeeraka, Sukla Jeeraka, Krsna Jeeraka,* and *Vanya jeeraka. Sodhala* described the varieties viz., *Upakunchika*, *Sukla jeeraka* and *Krisna Jeeraka.* But under *Dvijeeraka* he omitted *Upakunchika. Kaiyadeva*[8] mentioned *Jeeraka tritaya.*

Synonyms of *Jeeraka*

The following are synonyms attributed to *Jeeraka* in different classical texts of Ayurveda*:*

S.No	Synonym	*D.N*[9]	*Sha.N*[10]	*B.N*[11]	*M.*N [12]	*Sho.N* [13]
1	*Jeeraka*	+	+	+	+	+
2	*Deerga jeeraka*	+	+	+	+	+
3	*Peetabha*	+	-	-	-	-
4	*Kana*		+	+	+	+
5	*Pujyamanakam*	+	-	-	-	-
6	*Magadham*	+	-	-	-	-
7	*Jarana*	+	+	+	-	+
8	*Ruchyam*	+	-	-	-	-
9	*Medhyam*					
10	*Deepyam*	+	-	-	-	-
11	*Hrdyam*	+	-	-	-	-
12	*Manognam*	+	-	-	-	-
13	*Surasa*	-	-	-	-	+
14	*Sugandha*	-	-	-	-	+
15	*Ajaji*	+	+	+	+	+
16	*Varunam*	+	-	-	-	-

Nirukti

According to pharmacognostical characteristics:

1. *Dheerga jeeraka:* If the fruit is long.
2. *Peetabha*: If the fruit is yellowish in color.
3. *Kana*: If it is small in nature.

Synonyms based on pharmacological actions

1. *Jeeraka*: Meaning that which digests
2. *Ruchyam*: Improves taste
3. *Jarana*: Acts as a good digestant
4. *Medhyam*: Improves memory
5. *Deepyam*: Stimulates appetite
6. *Hrdyam* - Good for the heart

7. *Manognam* - Good for the brain
8. *Surasa* - Stimulates the secretion of saliva
9. *Sugandha* - Exhibits a pleasant smell
10. *Ajaji* - Improves appetite

Rogaghna karma (Pharmacological action)

According to _Nighantu_

According to _Bhavaprakasha Nighantu_

Jeeraka is mentioned in *Harithakyadi varga* in *Bhava prakasha Nighantu.*[14]

"जीरकोजरणो अजाजीं कनास्याधीद्धीर्घजीरकः।
जीरकत्रितयं रूक्षं कटुष्णं दीपनं लघु।।
संग्रहि पित्तलं मेध्यं गर्भाशय विशुद्धिकृ।
ज्वरघ्नं पाचनं वृष्यं बल्यं रुच्यं कफापहम्।।
चक्षुष्यं पवनाध्मानगुल्मच्छदर्यतिसारहत् " (भावप्रकाश निघण्टु)

Sangrahi- Absorbent
Pittalam- Increases *Pitta*
Medhyam- Increases memory
Garbhashaya vishudhikrit- It cleans the uterus
Jwaragna – It cures the fever
Pachanam- It is digestant
Vrshyam – Aphrodisiac
Balyam – It increases strength
Ruchyam – It improves taste
Kaphapaham – It decreases *Kapha*
Chakshushya – Good to us
Pavanaadhmanagulmachardihatisarahat – It decreases the *Vata*, bloating of the stomach, diarrhea and vomiting.

According to _Dhanwantari Nighantu_[15]

जीरकं दीर्घकं ह्रुद्यमजाजौ दीप्यमागधम्
मनोज्ञं वरुणं रुच्यं पीताभं पूज्यमानकम् II
जीरकं कटुकं रूक्षं वातह्यद्दीपानं परम् I
गुल्माध्मानातिसारघ्नं ग्रहनीक्रुमिह्यत्परम्II

Jeeraka is pungent in taste, *Ruksha guna* pacifies *Vata dosha* and stimulates appetite. It is useful in tumors, tympanitis, diarrhea and worms.

Rasa panchaka of _Jeeraka_

- *Rasa- Katu*
- *Guna-Laghu, Rooksha*
- *Veerya- Ushna*
- *Vipaka- Katu vipaka*
- *Dosha karma- Vata kapha samaka, Vata samaka* due to its *Usna virya* and *Kapha samaka* due to its *Ushna virya, Katu vipaka* and *Katu rasa.*

Therapeutic properties of _Jeeraka_

1. *Medhyam*
2. *Deepanam*
3. *Paachanam*
4. *Hrdyam*
5. *Manognam*
6. *Vrshyam*
7. *Balyam*
8. *Chakshushyam*
9. *Pavana adma gulma hara*
10. *Chardi hara*
11. *Atisara hara*
12. *Jwaragna*
13. *Paachana*
14. *Garbashaya vishudhikrit*
15. *Krimi haram*

Indications of _Jeeraka_[16]

1. *Amlapitta* (hyperacidity)- First, the paste is prepared from *Jeeraka* and *Dhanyaka* then it is added to ghee and cooked. It is administered internally and it is very useful in *Amlapitta.* It is also effective in diseases of *Kapha* and *Pitta doshas, Aruchi* and *Mandanila* (C.D.).
2. *Chardi- Souvarca lavana, Jeeraka, Sarkara* and *Marica* are mixed with honey and given as anti-emetic. (V.M.)
3. *Visama Jvara- Jeeraka* powder should be given with jaggery (A.S.Ci.2/93).
4. *Grahani- Jeerakadya churna*
5. *Atisara- Jirakadi modaka*
6. *Agnidagdha vrana- Jiraka ghrita*

Dosage forms of _Jeeraka_: *Churna*
Kashaya
Arista
Lepa
Ghrita
Modaka

***Vishista yogas*[16]**

1. *Dadimaadi churna*
2. *Kushthadi churna*
3. *Hingwadi churna*
4. *Jeerakadyarista*
5. *Jeerakaadi modaka*
6. *Jeeraka ghrita*
7. *Daadimaadya ghrita*

Botanical Description of _Jeeraka_

Jeeraka is a perennial herb. The leaves are bifurcated or trifurcated into three sections, with the terminal segments being thread-like (filiform). The flowers are organized in compound umbels, featuring many rays together with several bracts and bracteoles. The calyx possesses diminutive, asymmetrical, and subulate teeth. The petals are either oblong or obovate, emarginate, and generally white, frequently exhibiting different diameters.

The fruit is cylindrical, tapering to a thin tip, and is hispid with large, single vittae situated beneath

each secondary ridge. The carpophore is either divided into two parts or split into two lobes. The seeds are slightly dorsally compressed and have a convex-concave morphology.

Distribution

Jeeraka is widely cultivated in India.

Daily Dosage: The average single dose of cumin is between 300 to 600mg. Cumin can be used both internally and externally, in ground form or as a pressed oil.

DISCUSSION

Cumin has long been used as an astringent, carminative, coagulant, and stimulant. It is also known for its exceptional antioxidant qualities. Additionally, it is used to treat a number of illnesses, including whooping cough, toothache, flatulence, digestion, jaundice, diarrhea, dyspepsia, and epilepsy. The antispasmodic and abortifacient qualities of cumin seeds are well documented.

CONCLUSION

Jeeraka, or cumin, is a remarkable herb with several advantages, especially for gastrointestinal ailments such as bloating and indigestion. In Ayurveda, it is esteemed for its function in *Garbhasaya shodana* (womb purification) and is advantageous for ailments such as anorexia and diabetes. This information is sourced from multiple journals, *Nighantus* (Ayurvedic lexicons), and *Samhitas* (treatises).

According to the literature, cumin is significant not only as a spice but also for its medicinal benefits. It is valued for its flavour and utilized as a prophylactic against numerous health concerns. Cumin is typically regarded as safe, with minimal documented adverse effects. Pregnant or breastfeeding individuals are recommended to refrain from its consumption, as cumin may reduce blood sugar levels. Furthermore, it should not be administered concurrently with antidiabetic agents to mitigate the risk of hypoglycemia. Although cumin has been historically utilized for numerous health advantages, experts recognised that many of its effects are not yet completely comprehended.

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